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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,757	11/15/2002	Geordie Henry Zapalac	124400	9192
23446	7590	01/21/2004	EXAMINER	
MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661			SONG, HOON K	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/065,757	ZAPALAC, GEORDIE HENRY	
	Examiner	Art Unit	
	Hoon Song	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Harman (US 5406479).

Regarding claim 1, Harman teaches an electron beam tomography (EBT) scanner for scanning a subject during a scanning time interval, a method to generate an image from a data set collected from said subject beginning at an arbitrary time within said scanning time interval (figure 1a), said method comprising:

generating a sequence (52a, 52b) of temporally separated, unfolded parallel view sinograms (50, 54a) corresponding to scans through said subject during a scanning time interval;

folding data from a first region of view angles from each of said sinograms into a second region of view angles in a corresponding next temporally adjacent sonogram (figure 3e, column 9 line 42+);

folding data from a third region of view angles from each of said sinograms into a fourth region of view angles in a corresponding previous temporally adjacent sonogram (holding process is repeated for rest of the sinogram views, column 10 line 28+); and

generating an image (62) from a subset of data taken from said sinograms wherein said subset of data begins at an arbitrary time within said scanning time interval.

Regarding claim 2, Harman teaches that said folding comprises:

weighting a first set of data corresponding to one region of view angles of one sinogram and weighting a second set of data corresponding to a different region of view angles of a different corresponding temporally adjacent sonogram to form a first weighted set of data and a second weighted set of data (column 9 line 50+);

summing together said first weighted set of data and said second weighted set of data to form a folded set of data (column 11 line 35+); and

replacing said second set of data with said folded set of data within said different region of view angles (column 9 line 42 and column 11 line 43+).

Regarding claim 3, Harman teaches that said unfolded parallel view sinograms are generated from fan view sinograms (column 7 line 25+).

Regarding claim 4, Harman teaches that said generating an image includes applying a reconstruction algorithm to said subset of data (column 11 line 45+).

Regarding claim 5, Harman teaches that each of said sinograms is gathered over scanning view angles comprising at least a total of π radians (column 7 line 60+).

Regarding claim 6, Harman teaches that said first region of view angles comprises angles greater than π radians (column 7 line 60+).

Regarding claim 7, Harman teaches that said second region of view angles comprises angles greater than 0 radians (column 7 line 60+).

Regarding claim 8, Harman teaches that said third region of view angles comprises angles less than 0 radians (column 7 line 60+).

Regarding claim 9, Harman teaches that said fourth region of view angles comprises angles less than π radians (column 8 line 5+).

Regarding claim 10, Harman teaches that selecting said arbitrary time within said scanning time interval to determine whether or not an imaged feature is an artifact (column 9 line 18+).

Regarding claim 11, Harman teaches that said method reduces motion artifacts within said image (column 7 line 20+).

Regarding claim 12, Harman teaches an electron beam tomography (EBT) scanner for scanning a subject during a scanning time interval, apparatus to generate an image from a data set collected from said subject beginning at an arbitrary time within said scanning time interval, said apparatus (figure 1a) comprising:

a sinogram pre-processing module (52) generating a sequence of temporally separated, unfolded parallel view sinograms corresponding to scans through said subject during a scanning time interval;

a sinogram data folding module (56) folding data from a first region of view angles from each of said sinograms into a second region of view angles in a corresponding next temporally adjacent sinogram, and said sinogram data folding module folding data from a third region of view angles from each of said sinograms into a fourth region of view angles in a corresponding previous temporally adjacent sinogram (figure 3e, column 9 line 42+ and column 10 line 28+); and

an image processing module (62) generating image data from a subset of data taken from said sinograms wherein said subset of data begins at an arbitrary time within said scanning time interval.

Regarding claim 13, Harman teaches that a monitor (26) to display said image data as a video image.

Regarding claim 14, Harman teaches that an electron gun in a vacuum chamber housing (10) to generate an electron beam within said EBT scanner.

Regarding claim 15, Harman teaches that at least one X-ray target (14) to generate at least one fan beam of X-rays when impinged upon by an electron beam of said EBT scanner.

Regarding claim 16, Harman teaches that a detector array (22) to detect X-rays emitted by at least one X-ray target of said EBT scanner.

Regarding claim 17, Harman teaches that a system control module (computer) to control various functions of said EBT scanner including scanning.

Regarding claim 18, Harman teaches that said first region of view angles comprises angles greater than π radians (column 7 line 60+).

Regarding claim 19, Harman teaches that said second region of view angles comprises angles greater than 0 radians (column 7 line 60+).

Regarding claim 20, Harman teaches that said third region of view angles comprises angles less than 0 radians (column 7 line 60+).

Regarding claim 21, Harman teaches that said fourth region of view angles comprises angles less than π radians (column 7 line 60+).

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Regarding claim 22, Harman teaches that said apparatus reduces motion artifacts within said image (column 7 line 20+).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is 703-308-2736. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on 703-308-4858. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Hoon Song


EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER